

James

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **34**
- SRM **37.1**
- Style **American Stout**

Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **15.2 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **9.6 liter(s)**
- Total mash volume **12.8 liter(s)**

Steps

- Temp **68 C**, Time **60 min**

Mash step by step

- Heat up **9.6 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Sparge using **8.8 liter(s)** of **76C** water or to achieve **15.2 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Vienna Malt	1 kg (31.3%)	81 %	8
Grain	Castle Pale Ale	1 kg (31.3%)	80 %	8
Grain	Płatki jęczmienne	0.2 kg (6.3%)	85 %	3
Grain	Fawcett - Brown	0.3 kg (9.4%)	72 %	180
Grain	Strzegom Karmel 200	0.2 kg (6.3%)	75 %	200
Grain	Strzegom Czekoladowy ciemny	0.3 kg (9.4%)	68 %	1200
Grain	Wędzony torfem	0.2 kg (6.3%)	82 %	10

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Chinook	10 g	60 min	12.8 %
Boil	citra	5 g	10 min	13.5 %
Boil	Sorachi Ace	5 g	10 min	12 %
Boil	Centennial	5 g	10 min	9.7 %
Dry Hop	Centennial	20 g	3 day(s)	9.7 %
Dry Hop	Chinook	20 g	3 day(s)	12.8 %

Yeasts

Name	Type	Form	Amount	Laboratory
us-05	Ale	Dry	11 g	fermentis